

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Miscellaneous Fittings for Pressurised Equipment**

with type designation(s)

**Marine Axial Flow Fans - WMOR, WMOR Ex, WMOD, WMOD Ex****Marine Centrifugal Fans - WPM, WPM Ex****Marine Duct Fans - WMR, WMR Ex**

Issued to

**Przedsiębiorstwo ALWO Sp. z o.o.  
Torun, Poland**

is found to comply with

**Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment  
IACS UR F29, Non-sparking fans, Rev. 6, June 2005****Application :****See Design Limitations**Issued at **Houston** on **2017-04-10**for **DNV GL**This Certificate is valid until **2022-04-09**.DNV GL local station: **Gdansk CMC**Approval Engineer: **Venkat Jangam**

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**Brandon D Caraway  
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



## Product description

Marine Axial Flow Fans, Centrifugal Fans and Duct Fans

## Application/Limitation

Marine Axial Flow Fans Series WMOR, WMOR Ex, WMOD, WMOD Ex

Design Parameter	Value
Maximum temperature of conveyed medium (°C)	45
Series WMOR and WMOR Ex - Nominal diameter (mm)	DN 200 to DN 1600
Series WMOD and WMOD Ex - Nominal diameter (mm)	DN 400 to DN 1600
Series WMOR and WMOR Ex - Casing thickness (mm)	3 to 10
Series WMOD and WMOD Ex - Casing thickness (mm)	10
Air gap (mm)*	2 to 13
Executions	L - light ; C - heavy
Types	N - Supply ; W - Exhaust
Dust content (g/m <sup>3</sup> )	0.3

Materials :	
Impeller	Aluminum Alloy
Casing	Carbon Steel
Protection inner lining of casing	Brass

\* Depends on motor shaft bearing diameter for non-sparking execution

Marine Centrifugal Fans Series WPM, WPM Ex

Design Parameter	Value
Maximum temperature of conveyed medium (°C)	45
Nominal diameter (mm)	DN 125 to DN 630
Impeller speed (RPM)	1,450 to 3,500
Positions	L0, P0, L2, P2, L4, P4, L6, P6
Dust content (g/m <sup>3</sup> )	0.3

Materials :	
Impeller	Aluminum AIMg3
Casing	Carbon Steel/Aluminium

Marine Duct Fans Series WMR, WMR Ex

Design Parameter	Value
Maximum temperature of conveyed medium (°C)	45
Nominal diameter (mm)	DN 100 to DN 200
Dust content (g/m <sup>3</sup> )	0.3

Materials :	
Impeller	Aluminum AIMg3
Casing	Aluminum AIMg3
Protection inner lining of casing	-

## Type Approval documentation

Drawings/ Documentation :

DrawingNo. / Document No.	Rev.	Title
ALWO A1-01	-	Marine Axial-Flow Fans WMOR and WMOD
ALWO C1-02	-	Marine Centrifugal Fans WPM
ALWO D3-02	-	Marine Duct Fans WMR
DTR 250-12/13	-	Marine Axial-Flow Fans, Manual Instruction

Job Id: **262.1-024667-1**  
Certificate No: **TAP00000UR**

DTR 950-01 - Marine Centrifugal Fans, Manual Instruction  
DTR 959-00 - Marine Pipe Fans Manual Instruction

## Tests carried out

## Marking of product

The products are as a minimum to be marked as follows:

- Manufacturer's name and trademark
- Part No. and Serial No.
- Fan type designation
- Motor type designation
- Additional information for every fan with Ex protection used for hazardous areas.

## Other conditions/ Comments

- This document may be used as part of the documentation required to comply with European Union (EU) Directives. It should however be noted that the scope covered by this document does not necessarily cover all the aspects required to issue the EU Declaration of Conformity and to affix the CE-mark. It is the manufacturer's/ operator's responsibility to ensure compliance with relevant EU Directives.
- Electric fan motors shall not be installed in ventilation ducts for hazardous spaces unless the motor is certified for the same hazard zone as the space served.
- Protective screens of not more than 13 mm square mesh are to be fitted in the inlet and outlet of ventilation ducts before opening.
- Fans are to be suitably earthed in order to prevent electrostatic charges during operation when necessary.
- Electric motors are excluded from this certificate. Electrical motors Ex-protected will have to comply with the relevant class for the ship. The certificate for the motors will be provided for the attending ship Surveyor at each classification/visit. The certificate of the complete non-sparking fan, including running test at the factory, will be provided.

**End Of Design Assessment**